Zoophobia

## Introduction

The game will be built by using the assets given from the Unity Learn - Junior Programmer. The game is about a character running away from animals because animals don’t like the character much.

## Concept

### Player control

The player will control a character that will continuously run from left to right in a side view game, the player has 3 lanes that he can move up and down with, using the arrow keys and can also run faster and slower using the arrow keys. The player can also jump using the space bar.

### Basic Gameplay

In the game objects will appear, moving from right to left on the screen, the player has the decision to jump over the object or to move away from it. The objects must be used to destroy the animals chasing the player. The player and the enemies both have health, when the player or the animal hits an object the health would be reduced. The score will increase as the player collects the coins.

### Sound & Effects

Sound effects will be used when the player jumps, runs, collect coins, collect powerup, crash or been attacked by the animals.

Particle effects will be used when crashing into a box, been attacked, collect coins, collect powerup, while running, or when the animals crash into an object.

### Gameplay Mechanics

As the game progresses, the player moves faster, making it difficult dodge the objects, at the near end of the level a boss fight will occur.

### User Interface

#### Main menu

Play > Name > Character select > Level select

Options > Audio + Controls + Back

Exit

#### In-game UI

Time

Score

Health

Current Powerup

#### Pause Menu

Continue

Options > Audio + Controls + Back

Exit

#### End Game

Restart

Exit

### Levels

Level 1 - City:

Dogs chasing player

Dogging Barriers

Pug Boss

Level 2 - Town:

Farm animals chasing player

Dogging Barrels and Crates

Level 3 - Woods:

Forest animals chasing player

Dogging Rocks and Tree logs

### Powerups

Dropping balls that does damage to the animals.

Shield that will grant immunity (star)

Magnet for coins

Double Coins

Heal (Food)

Thunder

Bomb

## Programming

Using Singleton pattern to create UIManager and GameManager

Using State Pattern to control the state of the game (Main menu, In Game, Pause, Game End)

Using Observer Pattern to know when the game has ended. (Enemies + Player + PowerUps + obstacles are observers)

Using Object Pooling to choose Characters and to spawn enemies, powerups and objects

### Scripts Layout

AI

EnemyMain – IDamageable, IEndGameObserver

Follow Player

When dead add score to player

BasicEnemy (inherited from EnemyMain)

Attack when close

Run closer to player, sometimes

BossPugDog (inherited from EnemyMain)

Stink breath

BossChicken (inherited from EnemyMain)

Fire breath

BossMoose (inherited from EnemyMain)

Laser eyes

Interfaces

IDamageable

Does Damage + Control Health

IPickupable

Disable when player hits it

IEndGameObserver

Notify

Lists

CharacterList

PowerupList

LevelList

LevelSelectList

BackgroundList

GroundList

CityList

Enemies

Objects

Bosses

TownList

Enemies

Objects

Bosses

NatureList

Enemies

Objects

Bosses

Obstacles - IEndGameObserver

When hit it does damage and gets disables

Moves left, and speed changes when game progresses

Player

PlayerController - IDamageable, IEndGameObserver

Player movement

Control Powerups

Pickups

Coins – IPickupable, IEndGameObserver

Add score to Player

PowerUp – IPickupable, IEndGameObserver

Activate picked up powerup

System

SpawnManager

Spawn Objects + Enemies

BackgroundRepeat

GameManager

Control the scenes

Control the game states

Control the gameplay

Control Observers

Control Time

Load/Saves high scores

Stores the player’s name, character selected and level

Stores the Audio Levels (Master, Music + SFX volume) + Load/Save

Setup Level

UI

UIManager

Contains all states, when to show which UI. Always run-in background (singleton)

Create a prefab of all the UI’s that will be controlled with the UIManager

MainMenu

Contains all the buttons + functions

PauseMenu

Contains all the buttons + functions

EndGameMenu

Contains all the buttons + functions

InGameUI

Contains Time, score and current powerup

Utils

Singleton

### Events:

To Keep score (enemies dies + coin collected)

Enable powerups

Obstacles to do damage

When player dies

* 1. Statics:

Level Selected (GameManager)

Speed of the background movement (GameManager)